

Saraswati Dental College, Faizabad Road, Lucknow

Science Update Notice Board

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1. High-Fluoride Toothpaste May Aid Brace Wearers

2. Oral bacteria create a 'Fingerprint' in your mouth

3. Is Sparkling Water Bad For Your Teeth?

4. These siblings are on a mission to cure oral cancer
Rural India is world's oral cancer capital

High-Fluoride Toothpaste May Aid Brace Wearers

High-fluoride toothpaste may be beneficial in numerous ways.

A Swedish study from Malmo University suggests that this toothpaste **thwarts white spots from developing** on the teeth when braces are worn. The



fluoride toothpaste possesses four times the regular amount of fluoride found in toothpaste.

Numerous studies have shown that 85% of people who have braces develop some kind of white lesions stemming from a type of decay.

This toothpaste proved effective in stopping one third of the white lesions in 11- to 16-year-olds. **No toothpaste prior to this one proved to be as reliable in preventing the white spots.**

Five dental practices and more than 400 people were given the opportunity to participate in the study. Among the participants, half were given the high-fluoride toothpaste while others received the toothpaste with the regular level of fluoride. All patients had photographs taken before and after treatment. The average treatment time was 20 months.

The information showed that about 45 percent of people who used the regular toothpaste showed signs of white spots compared to 34.6 percent of people who used the high-fluoride toothpaste.

Thought of the Day

*The two most important days in your life are:
The day you are born &
The day you find out why.
...Mark Twain*

Oral bacteria create a 'Fingerprint' in your mouth

The bacteria in the human mouth - particularly those nestled under the gums - are as powerful as a fingerprint at identifying a person's ethnicity. Scientists identified almost 400 different species of microbes in the mouths of 100 study participants belonging to four ethnic affiliations: non-Hispanic blacks, whites, Chinese and Latinos. Samples of bacteria were collected from saliva, tooth surfaces and under the gums of the study participants. Only 2% of bacterial species were present in all individuals - but in different concentrations according to ethnicity - and 8% were detected in 90% participants. Beyond that, each ethnic group was represented by a "**signature**" of shared microbial communities. No two people were exactly alike. That's truly a fingerprint. This is the first time it has been shown that ethnicity is a huge component in determining what you carry in your mouth. More than 60 percent of bacteria in the human mouth have never been classified, named or studied because they won't grow in a laboratory dish, so the researchers identified the different species -- or species-level operational taxonomic units -- by sequencing their DNA.

The findings could help explain why people in some ethnic groups, especially African Americans and Latinos, are more susceptible than others to develop gum disease. Research also confirms that one type of dental treatment is not appropriate for all, and could contribute to a more personalized approach to care of the mouth. The most important point of this research is discovering that ethnicity-specific oral microbial communities may predispose individuals to future disease. Though it's too soon to change dental practice based on this work, findings show that "there is huge potential to develop chair-side tools to determine a patient's susceptibility to disease." Nature appears to win over nurture in shaping these communities, because African Americans and whites had distinct microbial signatures despite sharing environmental exposures to nutrition and lifestyle over several generations.

Bacteria live together in communities called biofilms, and it's within that infrastructure that they communicate with each other and with the immune system. A key to overall human health, is keeping those oral biofilms themselves in good health. The overarching goal here is to say, 'If you're healthy, are biofilms similar between individuals?' We know, in fact, that they are not similar. "Among healthy people, there is a core group of species everybody seems to have. **But then there is personalization.** What factors contribute to this personalization? Gender, age, other parts of genetics?" It did make sense that bacteria below the gums are most closely linked to ethnicity identification because they are the least likely to be disrupted by environmental changes in the mouth, such as food, toothpaste and tobacco. "Bacteria under the gum line are protected but are also the first opportunity your body gets to be educated about the bacteria that hang out in your mouth," she said.

The power of bacteria in the body remains misunderstood to some extent. Though many people are inclined to blame disease susceptibility on lifestyle and behavior, this study suggests that humans can be predisposed to certain disease risks solely because of the microbes that set up shop in their mouths. We underestimate these bugs and their power to do good and evil to us. As long as we harness their good side, we're healthy.

Exercise, healthful eating, avoiding smoking, brushing and flossing teeth, preventing diabetes and obesity -- all of these factors are in our control. But when it comes to genetic factors, you want to ask: 'Am I in charge or not?'"

Thought of the week

Life always offers you a second chance

It is called TOMORROW

Is Sparkling Water Bad For Your Teeth?

Posted on January 21, 2015

As the new year begins many of us are trying to choose healthier options. This includes attempting to make smarter choices in our choice of drink. A choice for many is to forego sugary sodas and choose carbonated water. The thought is we will choose a lower calorie drink that is also less harmful to our oral health. But is sparkling water safer for our teeth and gums?

What Is Sparkling Water?

Sparkling water is made by dissolving carbon dioxide in water, creating carbonic acid. This chemical process just adds bubbles. It does not add sugar, calories, or even caffeine. Tonic water, club soda, and mineral water are all types of readily available carbonated water, but these have **added sodium, vitamins, or sweeteners**, so it's important to read the label.

Is Sparkling Water Harmful To Our Teeth?

Yes, sparkling water can harm your teeth. While sparkling water is only slightly more acidic than regular tap water it has the power to do damage to our teeth's enamel through a process called tooth erosion (wearing away of the outer layer of our teeth due to acids). Some of the causes of tooth enamel erosion include:

- Consuming excessive amounts of sodas (high levels of phosphoric & citric acids)
- Fruit drinks (some acids in fruit drinks are more erosive than battery acid)
- Dry mouth or low salivary flow (xerostomia)
- Diet (high in sugar and starches)
- Acid reflux disease (also called GERD)
- Gastrointestinal problems
- Medications (for example aspirin and antihistamines)
- Genetics
- Environmental factors (friction, wear and tear, and stress)

Research has shown that sparkling water has a pH (measure of acidity) of approximately 3 (with 7 being neutral). The researchers used extracted teeth and placed them in glasses filled with various types of sparkling waters. What they found was quite surprising. Sparkling water does in fact have the acidity to erode tooth enamel.

Sparkling Water Conclusion

While the research showed that sparkling waters can erode tooth enamel, it is important to note that if used in moderation it is a perfectly healthy alternative to sodas and energy drinks. Remember to practice good oral hygiene after using these drinks and you should have little to worry about in terms of your dental health.

<http://www.rediff.com/getahead/report/achievers-these-siblings-are-on-a-mission-to-cure-oral-cancer/20150216.htm>

These siblings are on a mission to cure oral cancer Rural India is world's oral cancer capital

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Only 1.5 per cent of dentists in India work in rural areas, which means that the remaining 98.5 per cent deal with just about one quarter of the country's population.

Two siblings, a dentist and an engineer, have come up with a solution that is changing rural India's dental healthcare in ways you can't imagine. This is their story!

Dr Preeti Adil Chandrakar and her engineer brother Praveen Adil often travel in a second hand truck with a diesel jerry can as portable water storage unit. It is certainly not a luxury car, even in rural Chattisgarh, but it is a functional one in their mission to improve oral care in the villages of Chattisgarh. Every time the two siblings go out in their mobile dentist lab, they reach unusual patients. Sometimes they are compared with nomads or madaris who roam around with monkeys. Villagers ask them why they charge so much when other madaris extract teeth for less than Rs 20. Others come back to the team after treatment or after the camps they conduct to thank them with food offerings.

The government has organised camps to expand dental care to villages, but the result has often been unsatisfying. "Governmental camps do not provide treatment on the spot," says Praveen. "When patients travel long distances to visit government hospital they figure out they have to deal with another doctor who often turns them down." Treatment facilities, medical staff, and/or medicines are often not available, and the patient is left disillusioned and disappointed. This was one of the main reasons why the siblings' clinic **iti Dirkha** had to deal with a good deal of skepticism. Many patients were initially hostile, but after two years on the road, Preeti and Praveen say that their clinic has received over 3000 footprints and 100 per cent patient satisfaction. The two founders share genes but not a professional background.

Preeti did her BDS (dentistry) from CDCRI, Rajnandgaon in 2008 and is the youngest independently practicing female dentist in Bhilai. She started working before she got married. Praveen is a tech graduate in electrical engineering from IIT, Kanpur. He started his career with corporate firms, worked in India and Singapore; then joined an energy consumption management start-up in Mysore which did not break through; and finally became a consultant. The siblings wanted to do something together in Chhattisgarh, their home state. Their family has a rural background and still maintains ancestral bonds with their village.

"Since childhood, we have been observing **poor oral hygiene, high tobacco consumption and lack of doctors in rural areas**. Some of our relatives passed away because they used to consume tobacco while suffering from chronic high blood pressure, which is a deadly combination," says Praveen. "**Rural India is truly the world's oral cancer capital**," he adds, explaining how they have planned to tackle this trend. "Establishing a specialist clinic in a suburban area was our first step. We didn't

start with conducting camps in the villages because we realised we first had to earn the trust of patients. So, we focussed on accurate diagnosis, ethical practice and affordable treatment to show our professionalism." It was later that the siblings and their team started organising camps in villages. "Our focus has always been more on prevention than cure," says Praveen.

At iti Dirkha, most of their time is spent in educating patients about how to prevent dental problems from deteriorating further. "Rural patients receive camp cards from us with the prescribed treatment and costs associated with it. They have the option to go take treatment on the spot or come down to the clinic within three months from the issue date of the card. The treatment costs for camp participants have been kept lower than patients coming directly to the clinic," Praveen explains.

Going directly to meet patients is fundamental for several reasons. The first is that **nearly all of them are unaware they have a dental problem.** "They go for treatment only when the dental pain gets intolerable," says Praveen. Moreover, iti Dirkha's patients are mostly daily wage workers and can't afford to take leave even for a day. iti Dirkha is trying to keep prices as low as possible and to improve services the team plans to start giving medicines as well. This would further decrease villagers' need to travel long distances for getting these. "We are in the process of building relationships with firms manufacturing oral healthcare products, which will help us bring down treatment costs significantly. We already have some partners offering us good discounts, but we are trying to build more partnerships," says Praveen.

The siblings have so far bootstrapped and reveal that they want to keep doing it although they have been approached by several VC firms who would like to invest in iti Dirkha. In the belief that social good and business grow at their best if they are mutually beneficial, iti Dirkha is planning to scale by improving services. "We want to establish new specialist centres in other suburban areas in the proximity of villages, or enter agreements with well reputed existing ones to expand our reach and make dental care more affordable," he says. "We want to appoint representatives in each village whom villagers can approach and record their dental problems with. We will then try and find the best possible date and location of camp to enable the needy, especially the elderly or differentially abled, to receive required treatment," Praveen adds. iti Dirkha is also tailoring services for the employees of medium sized businesses operating in rural areas to diversify their sources of income. **The second hand truck with a diesel jerry can for water storage and lot of clinking dentistry tools, carefully arranged inside, makes a powerful image.** iti Dirkha has its big challenges which vary from bad roads, high costs, lack of proper equipment, and inconsistent communication with villagers. However, the team's patience and meticulousness just make challenges seem like guidelines for improvement, and not obstacles.

